

## ABSTRACT OF THE DISCLOSURE

A paramagnetic oxygen sensor and method employs a pressure sensor having a membrane extending through an air gap for a magnetic field. A piezoelectric element is mounted on the membrane. Gas chambers are formed on either side of the membrane. The gas mixture, the properties of which are to be measured, is supplied to one of the chambers. A reference gas is applied to the other chamber. A pulsating magnetic field is provided across the air gap and through the chambers containing the gas mixture and reference gas. The differing responses of the gas mixture and reference gas to the magnetic field deflect the membrane. The deflection of the membrane is sensed by the piezoelectric element. The piezoelectric element maybe operated either in a passive mode or active mode to sense the deflection of the membrane.